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RESPONSE TO COMMENTS ON DRAFT REMEDIAL INVESTIGATION REPORT POTENTIAL  
SOURCE OF CONTAMINATION 45 (PSC45) NAS JACKSONVILLE FL  
5/2/2013  
TETRA TECH



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Project Number 112G01511

Ms. Adrienne Wilson  
Remedial Project Manager  
Code OPDE3/AW  
Department of the Navy  
Naval Facilities Southeast  
Ajax Street, Building 135N  
NAS Jacksonville, Florida 32212-0030

Reference: CLEAN IV Contract Number N62467-04-D-0055  
Contract Task Order Number JM19

Subject: Response to Comments for the Draft, Revision 0, Remedial Investigation Report,  
Potential Source of Contamination 45, Naval Air Station Jacksonville, Florida

Dear Ms. Wilson:

Tetra Tech is pleased to submit this letter responding to the comments on the Draft Remedial Investigation Report for Potential Source of Contamination 45 (Revision 0) received from the Naval Air Station (NAS) Jacksonville Partnering Team members. This report was submitted to the partnering team December 21, 2012. The questions and/or comments that have been received by Tetra Tech from the NAS Jacksonville Partnering Team members are addressed below.

### **Naval Facilities Engineering Command Southeast**

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#### **Adrienne Wilson**

**Comment:** I have reviewed the PSC 45 RI. I thought we had delineated PSC 45. The other sources are another site requiring an additional RI. The Report is confusing in some areas you say it's delineated in others you say the site is not aerially delineated. Please make it consistent. It would be best to say there are 2 sites. Not sure how the other investigation will be funded since it's not linked to a past problem...

**Response:** The language was modified throughout the text to note that following a review of the Phase II data from the areas to the north and northeast (DPT 14, DPT 21, DPT 13, DPT 22, and DPT 12) show that those results are distinctly different from the chemical profiles of other sampling locations at PSC 45. These results suggest that a secondary source of contamination originating somewhere immediately north of PSC 45 is likely to be responsible for impacts to groundwater in that area. Based on review of this information, the Partnering Team determined that additional investigation into this possible second source area should be conducted as a separate site and that further investigation of the area to the north and northeast of PSC 45 is not warranted as part of the PSC 45 RI.

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**Comment:** Please clarify the portions that appear contradictory (delineated or not). I cannot send my comments as Tim did within the body of the document...

**Response:** Language was modified throughout the text that resolved the contradictory language.

**Comment:** Is it possible to say we have defined PSC 45 contamination and the rest will be investigated later??

**Response:** Language was modified throughout the text. For example, in the Recommendations section, it was noted that: (a) the extent of soil contamination at PSC 45 was not defined, (b) the extent of groundwater contamination at PSC 45 has been adequately delineated, and (c) based upon a review of the data, the Partnering Team concluded that a second RI needed to be conducted to evaluate the presence of potential second source area located to the north/northeast of PSC 45.

## **Naval Air Station Jacksonville, Facilities and Environmental Department**

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### **Tim Curtin**

A markup pdf of the report was received by Tim Curtin. Changes were made to the text as edited in the file provided by Tim Curtin. Comments inserted into the file are as follows:

**Comment:** Figure 2-6: Comment on Building 200 – "This is not an administration building. It is a ground support equipment shop. Correct on Figure 4-1 too."

"Identify the wash rack building hiding somewhere in the shadow. This RI is all about the wash rack yet we never show where it is. This is true for many of the figures in this report."

**Response:** Figures 2-6, 4-1, 4-3, and 8-1 were corrected as per comment. Also, the wash rack area was identified on figures where shown.

**Comment:** Page 2-15, first paragraph: Text reads "The bottoms in the stormwater drains are below the top of the water table; therefore, the drains can remove groundwater from the upper layer of the aquifer, but cannot act as a source of water to the aquifer (Davis, 1998)." Tim Curtin's comment: "Why is this true? I don't understand. What if the pipe is full and the ground water level is low?"

**Response:** The language in the draft RI report was not changed as such language represents the known condition at PSC 45. Speculations, related to extreme weather events (e.g. prolonged droughts), are beyond the scope of the draft RI report as there are no site-specific data associated with such extreme weather events to draw upon.

**Comment:** Section 4.5.1, second sentence – "The syringe procedure (SW-846 Method 5035), however, was used to collect soil samples that were analyzed for VOCs." Tim Curtin's comment: "How do you use a syringe to collect a soil sample?"

**Response:** Please see Section 4.3 entitled "Syringe and Syringe Valves" of Method 5035 (<http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/5035.pdf>)



**Comment:** Section 6.3.2, second paragraph, last sentence – “the presence of PAHs is likely as a result of cleaning activities at PSC 45 associated with oil and/or other petroleum products.” Tim Curtin’s comment: “Really? I thought PAHs came from burning fossil fuel. Learn something every day.”

**Response:** Polycyclic Aromatic Hydrocarbons (PAHs) are a group of semivolatile organic compounds (SVOCs) that are present in crude oil (<http://www.epa.gov/bpspill/pahs.html>).

**Comment:** Section 6.3.3, first paragraph, fourth sentence – “Metals are also more mobile under acidic conditions, which may exist in areas where plating-type activities have occurred.” Tim Curtin’s comment: “As far as we know, there was never any plating activity here. There has always been battery acid though.”

**Response:** The sentence “Metals are also more mobile under acidic conditions, which may exist in areas where plating-type activities have occurred.” was removed from the draft RI report.

**Comment:** Section 9.2, first and third paragraphs - Text reads “The information presented in this RI demonstrates that the nature of the contamination is known, but the extent of contamination in soil and groundwater has not been fully delineated... For the remaining groundwater impacts that can be attributed to PSC 45, the extent of contamination has been adequately delineated.” Tim Curtin’s comment: “Which is it? Has the ground water been adequately delineated or not? Please clarify.”

**Response:** The language was changed to remove the ambiguity presented in the text.

## United States Environmental Protection Agency

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### Pete Dao

**Comment:** The EPA has one comment on the risk assessment portion of the document. In section 7.8, some COPCs that were found above risk screening levels but below their MCL or GCTL were eliminated as COCs. Specifically, chromium, and ethylbenzene should be retained as COCs. When clean up target levels are established in the FS and Record of decision these contaminant levels will be set at MCLs, while other chemicals without MCLs will be adjusted lower to meet cumulative risk within the EPA risk range of 10<sup>-4</sup> to 10<sup>-6</sup> for target organ or system.

**Response:** Section 7.0 was modified to incorporate the information in this comment. However, chromium was not retained as a COC as the maximum detected groundwater concentration (6 µg/L) was less than the site background concentration (208 µg/L).

## Florida Department of Environmental Protection

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### David Grabka

- (1) On page ES-4, third bullet, it states that carcinogenic risks for residential exposure to VOCs through vapor intrusion exceeded the Department’s target risk level. The Department has not promulgated acceptable risk levels for inhalation of contaminants through vapor intrusion.





**Response:** Where promulgated acceptable risk levels do not exist for a pathway/route of exposure, the risks to human health from potential exposure to carcinogenic chemicals of concern (COCs) were calculated using standard methods and default parameters employed by both the United States Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP). This dual approach was used throughout the draft Remedial Investigation PSC 45 report as the USEPA and the FDEP have similar but not identical procedures for conducting risk assessments. The goal is to use both approaches in attempt to meet the needs of both agencies.

Currently the FDEP has not promulgated acceptable risk levels for inhalation of contaminants through vapor intrusion. Therefore, it was necessary to calculate the potential risk to human receptors through vapor intrusion using the Johnson and Ettinger vapor intrusion model and the FDEP default parameter for target cancer risk, shown in Table VI of Chapter 62-777 F.A.C.

- (2) On page ES-4, fifth and sixth bullet, it discusses carcinogenic risks for various exposures (i.e. maintenance worker, construction worker, adolescent trespasser, etc.), but does not state the media by which the exposure originates. Also, the word "noncarcinogenic" is misspelled in the fifth bullet.

**Response:** The text was modified to add the media by which the exposure originates and the misspelling was corrected.

- (3) On page 6-10, Section 6.2.4, second paragraph, last sentence, it says that phthalate esters detected at the site are believed to be attributable to laboratory and field contamination rather than site related. Has there been evidence collected to demonstrate this or will this be investigated further?

**Response:** Section 6.2 presents information on chemical persistence and degradation processes. The language in Section 6.2.4 related to laboratory and field contamination was removed as such was not related to transformation processes that affect the chemical/physical state of analytes detected soil or groundwater at the site.

- (4) On page 7-1, Section 7.1, second paragraph, third sentence, it erroneously states that surface soils are understood to be not contaminated. As stated in Section 4.3.2, soil samples were collected from 0.5 to 2.5 feet below land surface and many of these samples were determined to be contaminated. As the Department defines surface soils for the purpose of direct exposure to be from between 0 and 2 feet below land surface, the contamination detected in the samples collected should be discussed as being available for direct exposure.

**Response:** The pipeline from the oil/water separator connected to the disposal pit is below the surface; therefore, there was no release of contaminants to the "shallow surface soil (0.5 feet bls)." The text was modified to incorporate the difference between the "shallow surface soil (0.5 feet bls)" and the "deeper surface soil (0.5 to 2.0 feet bls)." The cancer and noncancer risk to receptors potentially exposed to the contamination in the deeper surface soil were evaluated and discussed in the report.

- (5) Table 7-1 should provide the Occurrence, Distribution and Selection of COPCs through Direct Soil Contact, but actually is the same as Table 8-1, which is the Development of Ecological COPCs in the Upper Layer of the Surficial Aquifer.



**Response:** The corrected Table 7-1 was inserted in the revised draft Remedial Investigation Report for PSC 45

- (6) In Table 7-6, the information provided with respect to FDEP GCTLs in the bottom part of the table appears to be in error. The Department does not distinguish between receptors in calculating GCTLs.

**Response:** Table 7-6 presents a summary of receptor specific risk screening levels (RCL) and cleanup target levels (CTLs). The RCL and CTLs for soil (SCTLs) are in that top portion of the table and do present information based upon the type of receptor. The groundwater cleanup target levels (GCTLs) are in the bottom of the table and they are not receptor specific. The air RSL are in the same block of information as the GCTLs. Receptor specific RSLs are presented in the bottom of the table.

- (7) In Table 7-7, there should not be an Exposure Point Concentration for benzo(a)pyrene equivalents for groundwater. Each individual PAH has its own GCTL and the use of Toxicity Equivalent Factors is not applied to groundwater concentrations.

**Response:** COPC selection for carcinogenic PAHs was conducted based on comparison of individual compounds to screening criteria (e.g. GCTL). However, it is still appropriate to calculate risks for exposure to carcinogenic PAHs through use of benzo[a]pyrene equivalents. For this investigation, benzo[a]pyrene and benzo[a]anthracene were detected only once and in the same sample. Overall, there is no difference in the results between handling them separately or individually. Therefore, Table 7-7 was not changed.

- (8) On page 8-2, second paragraph, fourth sentence, it says that contaminated subsurface soil does not provide a complete pathway for ecological receptors. As discussed in comment (4), soil samples were collected from 0.5 to 2.5 feet below land surface and if this soil is uncovered with asphalt or concrete, this soil would be available for contact with burrowing ecological receptors.

**Response:** The site is surrounded by buildings and paved surfaces. With the exception of small areas of mowed grass at the edges of buildings and along roadsides, there is no ecological habitat in the vicinity of PSC 45. The text was modified to incorporate the difference between the "shallow surface soil (0.5 feet bls)" and the "deeper surface soil (0.5 to 2.0 feet bls)."

- (9) In Section 7.3.2, it says that the results from DPT locations are attributable to another source and data from those locations were excluded from COPCs for groundwater. However, contaminants from those locations, specifically carbon tetrachloride, are discussed in detail in the ecological risk assessment.

**Response:** The text was revised and the data from the DPT locations attributable to another source were not used in the ecological risk assessment.

- (10) On page 9-2, Section 9.1.1, first paragraph, fifth sentence, same as comment (1) above.

**Response:** See the response to comment (1).

- (11) On pages ES-6, second paragraph, 8-8, third paragraph, and page 9-3, first paragraph, it discusses the surface water point of exposure as outside the "mixing zone" as Chapter 62-302.530, F.A.C., states that surface water quality criteria are "to be applied except within zones of mixing". The Department's cleanup rule, Chapter 62-780, F.A.C., does not allow for mixing zones and their use for determining acceptable discharge

concentrations from infiltration to the storm sewer system at Naval Air Station Jacksonville is prohibited.

**Response:** Comment noted. Text has been modified in accordance with NAS Jacksonville Team discussion on October 11, 2011 noted below.

Based on NAS Jacksonville Partnering Team discussions in October 2011, it was determined that an additional downgradient well would be added and another round of groundwater monitoring would be conducted to evaluate if there is potential for impact to the storm sewer. The storm sewer that is likely receiving groundwater associated with PSC 45 is part of the OU 3 storm sewer system, which is currently being evaluated as part of the OU 3 RI/FS Addendum effort. An evaluation of potential corrective measures related to the storm sewer pathway based on the potential for risks posted to human health and ecological receptors related to the St. Johns River will be addressed under that separate effort.

The additional data collected from the newly installed and previously existing wells will be incorporated into the FS for PSC 45. As a result, evaluation of the storm sewer pathway and reference to mixing zones has been removed from the document.

- (12) In the determination of chemicals of potential concern (COPCs), background concentrations of inorganic chemicals are usually used to screen out contaminants before they become COPCs. Cobalt is described throughout the document as a COPC or a chemical of concern (COC). However, the background screening concentration of cobalt (Appendix D) is higher than what was detected in the Remedial Investigation. Other inorganic chemicals should also be screened against background screening values.

**Response:** The analytical results for the inorganic chemicals were already screened against the background values provided in Appendix D for soil. The report was revised to screen groundwater data against background. As a result of this screening, aluminum, arsenic, chromium, cobalt, and iron were no longer retained as COPCs in groundwater. The draft text, tables and figures were revised as appropriate throughout the report.

- (13) I have the following editorial comments:

- a. On page ES-2, second paragraph, first sentence, the word “indicates” is misspelled.
- b. On page 4-14, Section 4.7, first paragraph, first sentence, add the word “in” between the words “identified” and “the”.
- c. On page 5-12, Section 5.3.3, third sentence, add the word “of” between the words “summary” and “the”.
- d. On page 5-20, first paragraph, third sentence, remove the word “was”.
- e. On page 5-23, top of the page, first line, please revise the sentence by either removing the word “turning” or adding the word “and” between the words “turning” and “joining”.
- f. On page 7-5, first paragraph, second sentence, the word “noncarcinogenic” is misspelled.

**Response:** The editorial comments have been addressed within the text.



**TETRA TECH**

If you have any questions regarding the enclosed material, or if I can be of assistance in any way, please contact me at (904) 730-4669, extension 213, or by e-mail at [Mark.Peterson@tetratech.com](mailto:Mark.Peterson@tetratech.com).

Sincerely,

Mark A. Peterson  
Task Order Manager

Enclosure

c: Tim Curtin, NAS Jacksonville  
Pete Dao, USEPA  
David Grabka/Jennifer Conklin, FDEP  
Debra M. Humbert, Tetra Tech (cover letter only)  
Chris Pike, Tetra Tech (unbound)  
CTO 112 Project File